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10/630,223	07/30/2003	Francis Michon	20695C-001410US	8301

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EXAMINER	
DEVI, SARVAMANGALA J N	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/630,223	MICHON ET AL.	
	Examiner	Art Unit	
	S. Devi, Ph.D.	1645	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11, 42-46 and 52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

RESPONSE TO APPLICANTS' AMENDMENT

Applicants' Amendment

1) Acknowledgment is made of Applicants' amendment filed 04/23/07 in response to the non-final Office Action mailed 10/23/06.

Status of Claims

2) Claims 1-4, 8, 42 and 52 have been amended via the amendment mailed 04/23/07.

Claims 1-55 are pending.

Claims 1-11, 42-46 and 52 are under examination.

Prior Citation of Title 35 Sections

3) The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office Action.

Prior Citation of References

4) The references cited or used as prior art in support of one or more rejections in the instant Office Action and not included on an attached form PTO-892 or form PTO-1449 have been previously cited and made of record.

Objection(s) Withdrawn

5) The objection to claim 8 made in paragraph 16(a) of the Office Action mailed 10/23/06 is withdrawn in light of Applicant's amendment to the claim.

6) The objection to claim 42 made in paragraph 16(b) of the Office Action mailed 10/23/06 is withdrawn in light of Applicant's amendment to the claim.

Rejection(s) Withdrawn

7) The rejection of claims 2-4 made in paragraph 8(a) of the Office Action mailed 10/23/06 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn. A new/modified rejection is set forth below to address the claims as amended.

8) The rejection of claims 7 and 45 made in paragraph 8(b) of the Office Action mailed 10/23/06 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claims.

9) The rejection of claims 8 and 46 made in paragraph 8(c) of the Office Action mailed 10/23/06 under 35 U.S.C § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the base claim(s).

10) The rejection of claim 52 made in paragraph 6 of the Office Action mailed 10/23/06 under 35 U.S.C. § 112, first paragraph, as containing new subject matter, is withdrawn. A new/modified rejection is set forth below to address the claim as amended.

Rejection(s) Maintained

11) The rejection of claims 1, 5, 6, 11 and 42-44 made in paragraph 10 of the Office Action mailed 10/23/06 under 35 U.S.C. § 102(b) as being anticipated by Michon *et al.* (*In*: *Streptococci and the Host*. (Ed) Horaud *et al.* Plenum Press, New York, pages 847-850, 1997) (Michon *et al.*, 1997), is maintained for the reasons set forth therein and herein below.

Applicants mention of MPEP § 2131 and contend that Michon *et al.* (1997) do not disclose all of the claim elements of Applicants' claims. Applicants further submit the following arguments. (a) The reference of Michon *et al.* (1997) is directed to combination conjugate vaccines against multiple serotypes of Group B streptococci. (b) Whereas the multivalent conjugate molecule claimed by Applicants contains 'at least three different bacterial capsular polysaccharides' that are linked to the same carrier protein molecule, the types Ia, II, and III conjugates described by Michon *et al.* (1997) are linked to different protein carrier molecules which may be of the same type. This can be seen in the first sentence of section 3 of Michon *et al.* (1997) which refers to the 'GBS TT conjugates' and not a 'conjugate' and therefore one can infer that the type Ia, II, and III conjugates are all separate and distinct molecules, and not attached to the same carrier protein as recited in Applicants' claims. (c) This interpretation is further supported by an analysis of section 2.1 of Michon *et al.* (1997) entitled 'Preparation of Conjugate Vaccines' and the references cited therein. Nowhere does section 2.1 state that the capsular polysaccharides are attached to the same carrier protein molecule. (d) References 3 and 5 of Michon *et al.* (1997) which were cited for a description of the methodology for producing the conjugates do not disclose any method for conjugating multiple capsular polysaccharides to the same carrier protein molecule.

Applicants' arguments have been carefully considered, but are not persuasive. As claimed currently, independent claims 1 and 42 do not require that at least three different purified bacterial

capsular polysaccharides are covalently linked to the 'same' carrier protein. The limitation 'carrier protein' in the amended independent claims is not limited to the same carrier protein, but encompasses more than one carrier proteins of the same or different kind. Therefore, Michon's (1997) multivalent conjugate vaccine is not excluded from the scope of the instant claims. Furthermore, the newly added limitation 'obtained by treating bacteria with an enzyme or base, directly followed by separation' in claim 1 represents a process limitation in a product claim. It should be noted that when claims are product-by-process claims, such claims are not limited to the manipulations of the recited step(s), but only the structure implied by the steps. MPEP § 2113 states:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)* (citations omitted).

A product does not have to be made by the same process in order to be the same product, because a product is a product, no matter how it is claimed. Applicants have not shown that the alleged difference(s) in the isolation process results in a product that is structurally different from the product of the prior art. The rejection stands.

12) The rejection of claims 1, 2, 5, 6, 10, 11 and 42-44 made in paragraph 11 of the Office Action mailed 10/23/06 under 35 U.S.C. § 102(b) as being anticipated by Paoletti *et al.* (*Infect. Immun.* 62: 3236-3243, 1994 – Applicants' IDS), is maintained for the reasons set forth therein and herein below.

Applicants contend that Paoletti is directed to a tetravalent GBS polysaccharide-tetanus toxoid conjugate vaccine and that Paoletti does not disclose that different types of capsular polysaccharides can be conjugated to the same protein molecule. Applicants speculate that Paoletti appears to merely combine individual conjugates, which each contains one type of capsular polysaccharide attached to one type of protein molecule, to produce a trivalent or tetravalent vaccine. Applicants submit that with respect to the trivalent vaccine, Paoletti states that the GBS trivalent conjugate vaccine was composed of 2 micrograms each of Ia-TT, II-TT, and III-TT in PBS. Applicants further state that for the tetravalent vaccines, Paoletti states that GBS tetravalent conjugate vaccine was made by combining the same three individually prepared conjugates used in the trivalent GBS conjugate vaccine and the newly prepared Ib-TT vaccine. Applicants conclude

that they do not see any disclosure in Paoletti that describes a multivalent conjugate molecule comprising 'a carrier protein' with at least three different bacterial capsular polysaccharides covalently linked to the carrier protein 'as recited in Applicants' claims'.

Applicants' arguments have been carefully considered, but are not persuasive. As claimed currently, independent claims 1 and 42 do not require that at least three different purified bacterial capsular polysaccharides are covalently linked to the 'same' carrier protein. The limitation 'carrier protein' in the independent claims, as amended, is not limited to the same carrier protein, but encompasses more than one carrier proteins of the same or different kind. Therefore, Paoletti's multivalent GBS conjugate vaccine is not excluded from the scope of the instant claims. Furthermore, the newly added limitation 'obtained by treating bacteria with an enzyme or base, directly followed by separation' in claim 1 represents a process limitation in a product claim. It should be noted that when claims are product-by-process claims, such claims are not limited to the manipulations of the recited step(s), but only the structure implied by the steps. MPEP § 2113 states:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)* (citations omitted).

A product does not have to be made by the same process in order to be the same product, because a product is a product, no matter how it is claimed. Applicants have not shown that the alleged difference(s) in the isolation process results in a product that is structurally different from the product of the prior art. The rejection stands.

13) The rejection of claims 9 and 52 made in paragraph 13 of the Office Action mailed 10/23/06 under 35 U.S.C. § 103(a) as being unpatentable over (not under 35 U.S.C. § 102(b) as inadvertently mistyped previously) by Paoletti *et al.* (*Infect. Immun.* 62: 3236-3243, 1994 – Applicants' IDS) as applied to claims 6 and/or 1 above, and further in view of Wang *et al.* (*PNAS* 95: 6584-6589, 1998), is maintained for the reasons set forth therein and herein below.

Applicants contend that Paoletti at best merely describes the combination of individual conjugates in the preparation of trivalent or tetravalent vaccines, and Wang does not alleviate the deficiency of Paoletti. Applicants submit that Wang is directed to the use of ozonolysis to selectively depolymerise polysaccharides containing beta-D-aldosidic linkages, but does not teach

or suggest a 'multivalent conjugate vaccine' as recited in Applicants' claims.

Applicants' arguments have been carefully considered, but are not persuasive. The Applicants' arguments on the teachings of Paoletti *et al.* have been addressed above. The reference of Wang *et al.* was not cited because it taught Applicants' multivalent conjugate vaccine, but was applied as a secondary reference to document that the depolymerised GBS capsular polysaccharides of the desired size, including those that fall in the range between 80 and 120 kilodaltons, or less than 100 kilodaltons, were known in the art at the time of the invention as taught by Wang. The rejection stands for the reasons set forth in paragraph 13 of the Office Action mailed 10/23/06.

14) The rejection of claims 2, 3, 7, 8, 45 and 46 made in paragraph 14 of the Office Action mailed 10/23/06 under 35 U.S.C. § 103(a) as being unpatentable over Michon *et al.* (*In: Streptococci and the Host.* (Ed) Horaud *et al.* Plenum Press, New York, pages 847-850, 1997) (Michon *et al.*, 1997) as applied to claims 6, 1 and 42 above and further in view of Michon *et al.* (US 6,602,508) ('508) and Laude-Sharp *et al.* (*In: Abstracts of the 97th General Meeting of the American Society for Microbiology*, Miami Beach, FL, page 251, # E-62, 1997), is maintained for the reasons set forth therein and herein below.

Applicants state that Michon *et al.* (1997) do not teach or suggest Applicants' claimed multivalent conjugate, but instead the combination of single polysaccharide-protein conjugates to form a multivalent vaccine. Applicants contend that Michon *et al.* ('508) are directed to depolymerized Group B streptococcus type II and type III polysaccharides. Applicants point to lines 38-40 of column 9 of Michon *et al.* ('508) and acknowledge that Michon *et al.* ('508) contemplate multivalent conjugates and their vaccines wherein different types of polysaccharides are conjugated to a single protein, but argue that Michon *et al.* ('508) do not teach or suggest Applicants' claimed multivalent conjugate which includes at least three different bacterial capsular polysaccharides that are purified bacterial capsular polysaccharides obtained by treating bacteria with an enzyme or base directly followed by separation. Applicants point to Example 1 of Michon *et al.* ('508) and acknowledge that Michon *et al.* ('508) describe the preparation of polysaccharides of types II and III Group B *Streptococcus* that include three steps: (i) base treatment; (ii) nitrosation and rearrangement to form a terminal 2,5-anhydro-D-mannose structure; and (iii) separation. Applicants submit that nowhere does Michon ('508) teach or disclose the preparation of type II or III Group B *Streptococcus* polysaccharides or any other strain of bacteria by treating bacteria with

an enzyme or base, directly followed by separation. Applicants further speculate that Michon *et al.* ('508) appear to teach away from the use of enzymes by describing enzymatic methods as costly.

With regard to Laude-Sharp *et al.*, Laude-Sharp *et al.* do not alleviate the deficiency of Michon *et al.* ('508) or Michon *et al.* ('1997). Applicants contend that Laude-Sharp *et al.* describe a trivalent combination vaccine consisting of CPS-Cbeta conjugates derived from CPS types Ia, II, and III. Applicants argue that because Laude-Sharp *et al.* describe combining 'conjugates' to make the multivalent vaccine, one can infer that even though the vaccine is trivalent, the conjugates themselves are not.

Applicants' arguments have been carefully considered, but are not persuasive. The Applicants' arguments on the teachings of Michon *et al.* (1997) have been addressed above. Analogous rebuttal applies to Applicants' arguments on the teaching of Laude-Sharp *et al.* As readily acknowledged by Applicants, Michon *et al.* ('508) taught multivalent conjugates and their vaccines wherein different types of polysaccharides are conjugated to a single protein. As acknowledged by Applicants, Michon *et al.* ('508) described the preparation of polysaccharides of types II and III Group B *Streptococcus* using the steps of base treatment and separation. Michon *et al.* ('508) expressly taught multivalent conjugates and their vaccines wherein different types of polysaccharides are conjugated to a single protein, and that the polysaccharides of GBS I, II, III, IV or V may be bound to the protein 'in various combinations'. See third full paragraph in column 9 of the '508 patent. Michon *et al.* ('508) The newly added limitation 'obtained by treating bacteria with an enzyme or base, directly followed by separation' in claim 1 represents a process limitation in a product claim. It should be noted that when claims are product-by-process claims, such claims are not limited to the manipulations of the recited step(s), but only the structure implied by the steps. MPEP § 2113 states:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)* (citations omitted).

A product does not have to be made by the same process in order to be the same product, because a product is a product, no matter how it is claimed. Applicants have not shown that the alleged difference(s) in the isolation process results in a product that is structurally different from the product of the prior art. The rejection stands.

15) The rejection of claims 1-7 and 42-45 made in paragraph 15 of the Office Action mailed 10/23/06 under 35 U.S.C. § 103(a) as being unpatentable over in view of Jennings *et al.* (US 5,993,825 – Applicants' IDS) ('825) in view of Paoletti *et al.* (*Infect. Immun.* 62: 3236-3243, 1994 – Applicants' IDS) and Claesson *et al.* (*J Pediatr.* 114: 97-100, 1989), is maintained for the reasons set forth therein and herein below.

Applicants mention of MPEP § 2143 and state that none of the references alone or in combination teach or disclose Applicants' claimed multivalent conjugate. Applicants contend that Jennings *et al.* is directed to vaccines for type II and V Group B *Streptococcus* bacteria and that nowhere does Jennings teach or suggest Applicants' claimed multivalent conjugates. Applicants argue that Jennings merely discusses multivalent vaccines that are prepared by combining conjugate molecules that have only one type of polysaccharide attached to a protein component. Applicants acknowledge that Jennings taught in particular that in addition to comprising the GBS type II and/or GBS type V conjugate molecules, the multivalent vaccine comprises other immunogenic molecules capable of eliciting the production of antibodies to pathogens selected from the group consisting of Group B *Streptococcus* types Ia, Ib, III, IV, *Haemophilus influenzae* type b and *E. coli* K1. Applicants state that Paoletti *et al.* (1994) do not teach or suggest the claimed multivalent conjugate. Applicants contend that Clasesson does not alleviate the deficiencies of Jennings or Paoletti because Claesson does not teach or suggest the claimed multivalent conjugate either.

Applicants' arguments have been carefully considered, but are not persuasive. As claimed currently, independent claims 1 and 42 do not require that at least three different purified bacterial capsular polysaccharides are covalently linked to the 'same' carrier protein. The limitation 'carrier protein' in the amended independent claims is not limited to the same carrier protein, but encompasses more than one carrier proteins of the same or different kind. Therefore, Jennings' ('825) multivalent conjugate vaccine is not excluded from the scope of the instant claims. Furthermore, the newly added limitation 'obtained by treating bacteria with an enzyme or base, directly followed by separation' in claim 1 represents a process limitation in a product claim. It should be noted that when claims are product-by-process claims, such claims are not limited to the manipulations of the recited step(s), but only the structure implied by the steps. MPEP § 2113 states:

> [E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is

unpatentable even though the prior product was made by a different process. *In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)* (citations omitted).

A product does not have to be made by the same process in order to be the same product, because a product is a product, no matter how it is claimed. Applicants have not shown that the alleged difference(s) in the isolation process results in a product that is structurally different from the product of the prior art. The rejection stands.

New Rejection(s) Necessitated by Applicants' Amendment

Rejection(s) under 35 U.S.C. § 112, First Paragraph (New Matter)

16) Claim 1 and those dependent therefrom are rejected under 35 U.S.C. § 112, first paragraph, rejected under 35 U.S.C § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Claim 1, as amended, includes the new limitation: 'covalently linked to polysaccharides, wherein the polysaccharides comprise ..... types of purified ..... polysaccharide, wherein said at least three different types of purified bacterial capsular polysaccharide are obtained by treating bacteria with an enzyme or base, directly followed by separation ....'. As presented currently, while the recited at least three different types of bacterial capsular polysaccharide are required to be purified, the covalently linked polysaccharides that comprise these at least three different types of bacterial capsular polysaccharide can be unpurified. Applicants state that support for the amendments to claim 1 is found throughout the specification, e.g., paragraphs [55] and [56] of the specification. However, these paragraphs of the specification do not provide descriptive support for a multivalent conjugate as claimed comprising covalently linked polysaccharides, wherein the polysaccharides comprise 'at least three different types of purified bacterial capsular polysaccharide' obtained by treating bacteria with an enzyme or base '*directly followed by separation*' and wherein the molecule elicits protective antibodies. Therefore, the above-identified limitation in the instant claim is considered to be new matter. *In re Rasmussen*, 650 F2d 1212 (CCPA, 1981). New matter includes not only the addition of wholly unsupported subject matter but also, adding specific percentages or compounds after a broader original disclosure, or even omission

of a step from a method. See M.P.E.P 608.04 to 608.04(c).

Applicants are respectfully requested to point to the descriptive support in the specification as filed by pointing to specific lines and pages, for the new limitations, or alternatively, remove the new matter from the claim(s). Applicants should specifically point out the support for any amendments made to the disclosure. See MPEP 714.02 and 2163.06.

17) Claim 52 and those dependent therefrom are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Claim 52, as amended, includes the new limitation: wherein the polysaccharides are 'purified polysaccharides that are' less than 100 kilodaltons in molecular weight. Applicants contend that claim 52 has been amended to recite that the polysaccharides are 'purified polysaccharides that are' less than 100 kilodaltons in molecular weight. Applicants state that support for the definition of the term 'purified polysaccharides' is given in paragraph [41] of the specification and support for the use of 'purified polysaccharides' in the conjugate vaccines of the invention is given generally throughout the specification, e.g., at paragraph [49]. Applicants maintain that the portion of the claim that recites that the 'polysaccharides are less than 100 kilodaltons in molecular weight' also finds support in paragraph [41]. Applicants cite a sentence from paragraph [41] and state that this portion of the specification supports the reference to the use of purified polysaccharides having a molecular weight less than 100 kD. However, these parts of the specification do not provide descriptive support for the now added limitation and the now claimed scope. As amended, claim 52 requires that 'the polysaccharides' present in the conjugate molecule of claim 1 are 'purified polysaccharides that are' less than 100 kilodaltons in molecular weight. In claim 1, as amended, the polysaccharides are 'covalently linked polysaccharides' that comprise therein at least three different types of purified bacterial capsular polysaccharide that are obtained by treating bacteria with an enzyme or base, directly followed by separation. The parts of the specification pointed to by Applicants do not provide descriptive support for the now claimed scope of claim 52. Therefore, the above-identified limitation in the instant claim is considered to be new matter. *In re Rasmussen*, 650 F2d 1212 (CCPA, 1981). New matter includes not only the addition of wholly unsupported subject matter but also, adding specific percentages or compounds

after a broader original disclosure, or even omission of a step from a method. See M.P.E.P 608.04 to 608.04(c).

Applicants are respectfully requested to point to the descriptive support in the specification as filed by pointing to specific lines and pages, for the new limitations, or alternatively, remove the new matter from the claim(s). Applicants should specifically point out the support for any amendments made to the disclosure. See MPEP 714.02 and 2163.06.

Rejection(s) under 35 U.S.C. § 112, Second Paragraph

18) Claims 1-11, 42-46 and 52 are rejected under 35 U.S.C § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

(a) Claim 1 is indefinite, confusing, and internally inconsistent in the limitations: 'polysaccharides ... comprise ..... types of purified bacterial capsular polysaccharide' (see lines 2, 3 and 5). As presented currently, the former 'covalently linked polysaccharides' are not required to be purified. Is the at least three different types of 'purified bacterial capsular polysaccharide' comprised within the broader covalently linked unpurified 'polysaccharides'?

(b) Claim 1 is indefinite and/or incorrect in the limitation 'different types of purified bacterial capsular polysaccharide' and is inconsistent with the limitation 'different types of bacterial capsular polysaccharides' in the dependent claims 2-4.

(c) Claim 1 is vague and indefinite in the limitation: 'different types of purified bacterial capsular polysaccharide are obtained by treating bacteria ..... directly followed by separation', because it is unclear what are being directly separated: bacteria or bacterial capsular polysaccharides? It is further not clear whether different types of purified bacterial capsular polysaccharides obtained by treating the same bacteria expressing different capsular polysaccharides, or different bacteria.

(d) Claims 1 and 42 lack a preceding article before the limitation 'carrier protein'. See line 1.

(e) Claims 2-4 are indefinite and confusing in the limitation: 'comprising a total of ..... different types of bacterial capsular polysaccharides'. Claims 2-4 depend from claim 1. Are the bacterial capsular polysaccharides recited in claims 2-4 different from or in addition to those recited

in the base claim 1?

(f) Claims 2-4, 6 and 9-11 are indefinite and have improper antecedent basis in the limitation: 'the bacterial capsular polysaccharides'. Claims 2-4, 6 and 9-11 depend directly or indirectly from claim 1, which includes the limitation 'bacterial capsular polysaccharide', but not 'bacterial capsular polysaccharides'.

(g) Claim 10 is not properly limiting in the limitation: 'the bacterial capsular polysaccharides'. Claim 10 depends from claim 6 wherein 'the bacterial capsular polysaccharides' are already limited to 'different Group B Streptococcus capsular polysaccharides'. It is suggested that Applicants replace the above-identified limitation with the limitation --the different Group B *Streptococcus* capsular polysaccharides--.

(h) Claim 42, as amended, includes the limitation: at least three different 'types of' bacterial capsular polysaccharides .... 'present in said composition' .... elicit protective antibodies against the three different bacterial capsular polysaccharides. The limitations 'at least three different types of bacterial capsular polysaccharides' and 'three different bacterial capsular polysaccharides' are inconsistent in scope because the latter limitation is broader than the former limitation and the former limitation encompasses a number that is more than three.

(i) Claims 2-11 and 43-46 and 52, which depend from claims 1 or 42 respectively, are also rejected as being indefinite because of the indefiniteness identified above in the base claim.

Relevant Prior Art

19) The prior art made of record and not currently relied upon in any of the rejections is considered pertinent to Applicants' disclosure:

- Chong *et al.* (US 2001/0048929) taught a novel glycoconjugate technology that can be used to covalently link multiple oligosaccharides from Group B *Streptococcus* 'to the same carrier protein'. See section [0057].
- Chong *et al.* (US 6,248,570 – Applicants' IDS) taught a base-extraction method to obtain large quantities of bacterial capsular polysaccharides from cultures of bacteria, followed by ultrafiltration to remove proteins and nucleic acids to provide a polysaccharide preparation of relatively uniform molecular weight and free of contaminants, which can then be conjugated to a carrier protein, via a direct or indirect linkage.

- Que *et al.* (*In*: *Abstracts of the 93rd General Meeting of American Society for Microbiology*, Atlanta, Georgia, 16-20 May 1993, page 156, #E-81) taught a trivalent conjugate vaccine comprising purified GBS types Ia, II and III capsular polysaccharides conjugated to detoxified *Pseudomonas aeruginosa* toxin A. See entire abstract.

Remarks

20) Claims 1-11, 42-46 and 52 stand rejected.

In line 4 of claim 42, for clarity, it is suggested that Applicant replace the limitation 'pharmacological acceptable carrier' with the limitation --pharmacologically acceptable carrier--.

It is noted that claim 10 has improper antecedent basis in the limitation 'the sialic acid residues', because claim 6 from which claim 10 depends, does not recite any 'sialic acid residues'.

21) Applicants' amendments necessitated the new ground(s) of rejection presented in this Office action. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 C.F.R 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

22) Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Central Fax number, (571) 273-8300, which receives transmissions 24 hours a day and 7 days a week.

23) Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAG or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.Mov. Should you have questions on access to the Private PAA system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

24) Any inquiry concerning this communication or earlier communications from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (571) 272-0854. A message may be left on the Examiner's voice mail system. The Examiner can normally be reached on Monday to Friday from 7.15 a.m. to 4.15 p.m. except one day each bi-week, which would be disclosed on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Jeffrey Siew, can be reached on (571) 272-0787.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

July, 2007

S. DEVI, PH.D.
PRIMARY EXAMINER